

## **CLAIMS**

What is claimed is:

1. A method of dynamically optimizing a plurality of application data resources, comprising:  
adjusting an execution strategy based on a variable system environment and a variable system workload; and  
dynamically refining the execution strategy to deliver a contracted quality of service and optimize the plurality of application data resources.
2. The method of claim 1, wherein the variable system environment comprises a modified hardware.
3. The method of claim 1, wherein the variable system environment comprises a modified software.
4. The method of claim 1, wherein the application data resources comprise backup and restore objects.
5. The method of claim 5, wherein the variable workload accounts for the number of queries, transactions, and uses in a system that generates data modifications to the backup and restore objects.
6. The method of claim 1, wherein if any one or more of the variable system environment or the variable system workload is determined to potentially, adversely or positively impact a guaranteed quality of service, QoS, to be delivered to a system, readjusting the execution strategy to delivery the guaranteed QoS.

7. The method of claim 6, wherein if the variable system environment and the variable system workload are determined to not potentially, adversely or positively impact the guaranteed QoS, leaving the execution strategy unchanged and recording the fact that the execution strategy has not been changed in response to the variable system environment and workload.

8. The method of claim 4, wherein the execution strategy comprises a backup and restore plan.

9. The method of claim 8, wherein adjusting the execution strategy comprises determining if a backup frequency needs to be adjusted, when new objects are added or existing objects are dropped.

10. The method of claim 9, wherein adjusting the execution strategy comprises determining a backup technology to be used.

11. The method of claim 10, wherein adjusting the execution strategy comprises determining a restore technology to be used.

12. The method of claim 1, wherein dynamically refining the execution strategy comprises continuously monitoring and responding to the variable system environment and workload, without client input.

13. The method of claim 12, wherein dynamically refining the execution strategy comprises refining a coarseness of the execution strategy to improve a guaranteed quality of service, QoS, based on actual runtime statistics.

14. The method of claim 1, wherein the application data resources comprise an eclectic mix of application data resources.

15. The method of claim 1, wherein dynamically refining the execution strategy comprises spanning the execution strategy across multiple systems.

16. The method of claim 1, wherein the plurality of application data resources are allowable at an application level.

17. The method of claim 1, further comprising associating a plurality of application dimensions with allowable technologies.

18. The method of claim 17, wherein the plurality of application dimensions comprise: recovery time, performance impact, data retention, and logical recovery time.

19. The method of claim 18, wherein associating the plurality of application dimensions with allowable technologies comprises introducing a plurality of service offering elements, SOEs, that are associated with each application dimension.

20. The method of claim 19, wherein for each service offering package, SOP, there exists one and only one SOE that is associated with each application dimension; and  
wherein each SOE is associated with at least one allowable technology.

21. A computer program product having a plurality of instruction codes embedded on a medium for dynamically optimizing a plurality of application data resources, comprising:

a first set of instruction codes for adjusting an execution strategy based on a variable system environment and a variable system workload; and

a second set of instruction codes for dynamically refining the execution strategy to deliver a contracted quality of service and optimize the plurality of application data resources.

22. The computer program product of claim 21, wherein if any one or more of the variable system environment or the variable system workload is determined to potentially, adversely or positively impact a guaranteed quality of service, QoS, to be delivered to a system, the first set of instruction codes readjusts the execution strategy to delivery the guaranteed QoS.

23. The computer program product of claim 22, wherein if the variable system environment and the variable system workload are determined to not potentially, adversely or positively impact the guaranteed QoS, the first set of instruction codes leaves the execution strategy unchanged, and a third set of set of instruction codes records the fact that the execution strategy has not been changed in response to the variable system environment and workload.

24. The computer program product of claim 21, wherein the execution strategy comprises a backup and restore plan.

25. The computer program product of claim 21, wherein the second set of instruction codes refines a coarseness of the execution strategy to improve a guaranteed quality of service, QoS based on actual runtime statistics.

26. The computer program product of claim 21, wherein the second set of instruction codes spans the execution strategy across multiple systems.

27. The computer program product of claim 21, further comprising a fourth set of instruction codes for associating a plurality of application dimensions with allowable technologies.

28. The computer program product of claim 27, wherein the plurality of application dimensions comprise: recovery time, performance impact, data retention, and logical recovery time.

29. The computer program product of claim 28, wherein the fourth set of instruction codes associating the plurality of application dimensions with allowable technologies comprises introducing a plurality of service offering elements, SOEs, that are associated with each application dimension.

30. The computer program product of claim 29, wherein for each service offering package, SOP, there exists one and only one SOE that is associated with each application dimension; and  
wherein each SOE is associated with at least one allowable technology.

31. A system for dynamically optimizing a plurality of application data resources, comprising:  
means for adjusting an execution strategy based on a variable system environment and a variable system workload; and  
means for dynamically refining the execution strategy to deliver a contracted quality of service and optimize the plurality of application data resources.

32. The computer program product of claim 31, wherein if any one or more of the variable system environment or the variable system workload is determined to potentially, adversely or positively impact a guaranteed quality of

service, QoS, to be delivered to a system, the adjusting means readjusts the execution strategy to delivery the guaranteed QoS.

33. The computer program product of claim 32, wherein if the variable system environment and the variable system workload are determined to not potentially, adversely or positively impact the guaranteed QoS, the adjusting means leaves the execution strategy unchanged and records the fact that the execution strategy has not been changed in response to the variable system environment and workload.

34. The computer program product of claim 31, wherein the execution strategy comprises a backup and restore plan.

35. The computer program product of claim 31, wherein the refining means refines a coarseness of the execution strategy to improve a guaranteed quality of service, QoS based on actual runtime statistics.

36. The computer program product of claim 31, wherein the refining means spans the execution strategy across multiple systems.

37. The computer program product of claim 31, further comprising means for associating a plurality of application dimensions with allowable technologies.

38. The computer program product of claim 37, wherein the plurality of application dimensions comprise: recovery time, performance impact, data retention, and logical recovery time.

39. The computer program product of claim 38, wherein the associating means introduces a plurality of service offering elements, SOEs, that correspond to each application dimension.

40. The computer program product of claim 39, wherein for each service offering package, SOP, there exists one and only one SOE that is associated with each application dimension; and

wherein each SOE is associated with at least one allowable technology.